

REMARKS

Pursuant to the present amendment, claims 1 and 10 have been amended. Claims 1-19 are pending in the present application. No new matter has been introduced by way of the present amendment. Reconsideration of the present application is respectfully requested in view of the amendments and arguments set forth herein.

In the Office Action, claims 1-12 and 14-19 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Aronowitz (U.S. Patent No. 6,033,998). Claim 13 was rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Aronowitz. Applicants respectfully traverse the Examiner's rejections.

As the Examiner well knows, an anticipating reference by definition must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). To the extent the Examiner relies on principles of inherency in making the anticipation rejections in the Office Action, inherency requires that the asserted proposition necessarily flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981); *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990); *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1789 (Bd. Pat. App. & Int. 1987); *In re King*, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986). It is not enough that a reference could have, should have, or would have been used as the claimed invention. "The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Oelrich*, at 326, quoting *Hansgirg v. Kemmer*, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939); *In re Rijckaert*, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993), quoting *Oelrich*, at 326; see also *Skinner*, at 1789. "Inherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a

given set of circumstances is not sufficient.” *Skinner*, at 1789, citing *Oelrich*. Where anticipation is found through inherency, the Office’s burden of establishing *prima facie* anticipation includes the burden of providing “...some evidence or scientific reasoning to establish the reasonableness of the examiner’s belief that the functional limitation is an inherent characteristic of the prior art.” *Skinner* at 1789.

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or

modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991; *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

Pursuant to the present amendment, independent claims 1 and 10 have been amended to recite that the initial thickness of the dielectric layer (claim 1) and silicon dioxide layer (claim 10) is less than a design thickness for the insulating layer (claim 1) and the gate dielectric (claim 10). Claims 1 and 10 have been further amended to recite that the step of introducing nitrogen into the dielectric layer (claim 1) and silicon dioxide layer (claim 10) is accomplished without forming a masking layer above the dielectric layer (claim 1) and the silicon dioxide layer (claim 10).

As thus amended, it is respectfully submitted that all pending claims are in condition for immediate allowance. Aronowitz is understood to be directed to a method of forming insulation layers having different thicknesses. Aronowitz specifically mentions that, for integrated circuits that have both analog and digital devices, the gate dielectric for the analog devices needs to be thicker than the gate dielectric for the digital devices. Col. 3, ll. 47-50. To that end, Aronowitz is understood to be directed to forming gate dielectrics of different thicknesses in different regions of the substrate, as defined by isolation region 204. A masking layer 208 is used to

protect areas 206a of the gate oxide 206 from nitridation. After the masking layer 208 is removed, an oxidation process is performed to increase the thickness of the region 206a.

At no point does Aronowitz or an other art of record disclose or suggest the invention defined by amended independent claims 1 and 10. There is no anticipation for at least the reason that Aronowitz does not disclose introducing nitrogen into the dielectric layer (claim 1) or silicon dioxide layer (claim 10) without forming a masking layer on those layers.

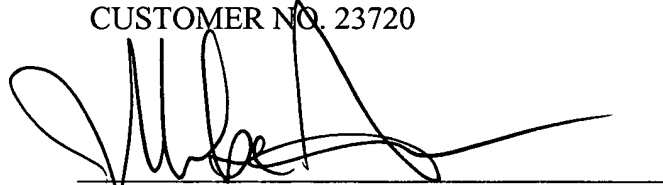
Moreover, there is no suggestion to modify the teachings of Aronowitz so as to arrive at Applicants' invention. Aronowitz is directed to a method wherein a masking layer is employed to prevent the introduction of nitrides into the covered portion of the treated layer. Claims 1 and 10 recite locally increasing the initial thickness of the dielectric layer (claim 1) or layer of silicon dioxide (claim 10) according to a local nitrogen concentration. At no point does Aronowitz disclose or even remotely suggest the methodology reflected in amended independent claims 1 and 10. If anything, Aronowitz can be said to teach away from the present invention. In Aronowitz, the masking layer is employed to insure that the portion 206a remains about pure silicon oxide. Col. 6, ll. 53-56. In contrast, in the invention defined in independent claims 1 and 10, the localized variations in the nitridation processes are allowed to occur, but the methods provide for locally increasing the initial thickness according to the nitrogen concentration in the layer. For example, in contrast to Aronowitz, a masking layer is not employed in the present invention to insure that portions of the treated layer are maintained as substantially pure silicon dioxide. Thus, it is not understood why one skilled in the art would be motivated to eliminate the masking layer in Aronowitz, since one of the stated objects in Aronowitz is to have a portion of the treated layer remain as substantially pure silicon dioxide. A recent Federal Circuit case

makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35. It is respectfully submitted that any attempt to assert that the invention defined by independent claim 1 is obvious in view of the prior art of record constitutes an impermissible use of hindsight using Applicants' disclosure as a roadmap.

For at least the aforementioned reasons, it is respectfully submitted that all pending claims are in condition for immediate allowance. The Examiner is invited to contact the undersigned attorney at (713) 934-4055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

WILLIAMS, MORGAN & AMERSON
CUSTOMER NO. 23720

A handwritten signature in black ink, appearing to read 'J. Mike Amerson', is written over a horizontal line.

Date: September 21, 2005

J. Mike Amerson
Reg. No. 35,426
10333 Richmond, Suite 1100
Houston, Texas 77042
(713) 934-4056
(713) 934-7011 (facsimile)

ATTORNEY FOR APPLICANTS